

No. 739,915.

PATENTED SEPT. 29, 1903.

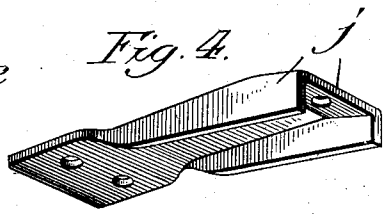
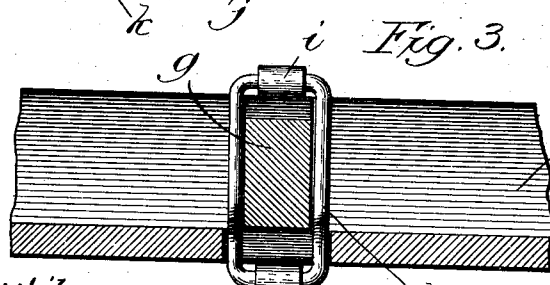
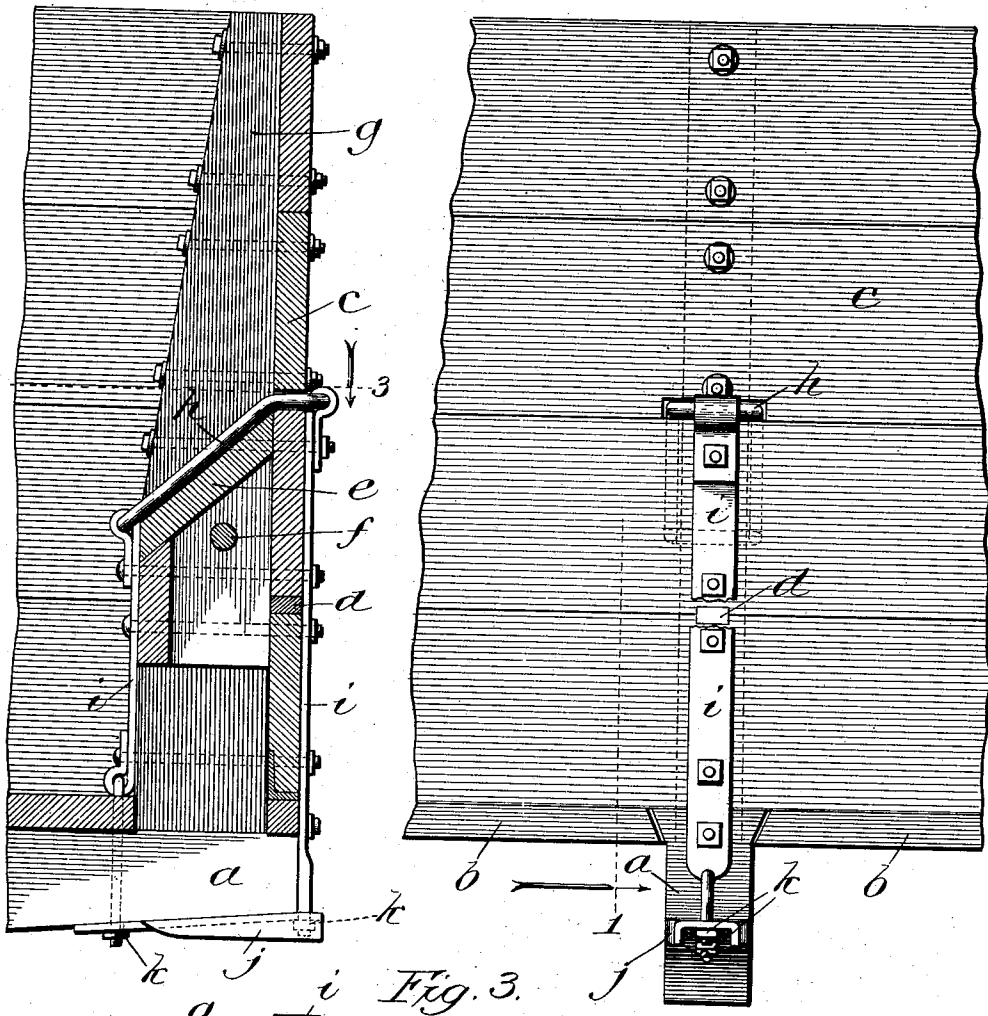
S. OTIS & G. B. MALTBY.
DUMP CAR.

APPLICATION FILED APR. 3, 1903.

NO MODEL.

Fig. 1.

Fig. 2.



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UNITED STATES PATENT OFFICE.

SPENCER OTIS AND GEORGE B. MALTBY, OF CHICAGO, ILLINOIS, ASSIGNORS
TO NATIONAL COAL DUMP CAR COMPANY, OF SOUTH DAKOTA, OF RAPID
CITY, SOUTH DAKOTA, AND CHICAGO, ILLINOIS, A CORPORATION OF
SOUTH DAKOTA.

DUMP-CAR.

SPECIFICATION forming part of Letters Patent No. 739,915, dated September 29, 1903.

Application filed April 3, 1903. Serial No. 151,001. (No model.)

To all whom it may concern:

Be it known that we, SPENCER OTIS and GEORGE B. MALTBY, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dump-Cars, of which the following is a specification.

This invention relates to that class of dump-cars known as "drop-bottom" dump-cars, and particularly to the means for strengthening or stiffening the side boards thereof, so as to form plank girders to withstand the stress and strains incident to ordinary use, all of which will more fully hereinafter appear.

The principal object of the invention is to provide a simple, economical, and efficient dump-car with side-plank girder mechanism to withstand the stress and strains incident to the use of the car.

The invention consists principally in a dump-car in which there are combined a supporting frame portion provided with a plurality of needle-beams transversely arranged, side boards extending upwardly from such supporting frame portion and formed of a plurality of planks longitudinally arranged, and metallic strap mechanism secured to such needle-beams and passed up and over a portion of such side-board mechanism to stiffen the same.

The invention consists, further and finally, in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional elevation showing a portion of the car as it appears when constructed in accordance with these improvements and taken on line 1 of Fig. 2 looking in the direction of the arrow; Fig. 2, a side elevation of a portion of the car as it appears in Fig. 1; Fig. 3, a sectional plan view taken on line 3 of Fig. 1 looking in the direction of the arrow, and Fig. 4 a perspective view of the pressed-metal washer arranged under the lower outer edges of the needle-beams.

In the art to which this invention relates it is well known that dumping-cars provided with drop-bottoms are more or less weakened by making such bottom portions flexible—

that is, so that they can be moved downwardly or upwardly to discharge or carry a load. It becomes very desirable, therefore, to provide some means to compensate for this weakening and so stiffen the structure of the car as to withstand the stress and strains incident to use. To this end this invention is primarily designed.

In illustrating and describing these improvements we have only illustrated and will here describe that which we consider to be new, taken in connection with so much as is old as will properly disclose the invention to others and enable those skilled in the art to practice the same, leaving out of consideration other and well-known elements, which if described and shown herein would only tend to confusion, prolixity, and ambiguity.

In constructing a car in accordance with these improvements we provide a supporting-framework which has the usual or any ordinary center sills longitudinally disposed (but not shown herein) and which is provided with a plurality of needle-beams *a*, transversely disposed. This supporting-framework is provided with a drop-bottom portion formed of a plurality of doors *b*, arranged to swing between each pair of needle-beams and drop down therebetween, so as to discharge a load. These swinging doors may be pivoted in any desired way to the supporting-framework of the car, and we therefore deem it unnecessary to show the specific means of pivoting herein, for the reason that it forms no material part or portion of these improvements. In this type of car it is very desirable to dispense with the usual outer side sills, all of which facilitates the discharging of the load, or, in other words, prevents its clogging and permits of a freedom of movement to such swinging doors which could not otherwise be obtained. It is well known, however, that if these side sills be dispensed with and a drop-bottom, as above described, provided the car will be materially weakened, in that it will not properly absorb and distribute the stress and strains incident to use. It therefore appears highly desirable to provide some means to compensate for the loss of such side sills which will materially stiffen the structure of

the car. To provide these means, side boards *c* are provided, formed, preferably, of a plurality of wooden planks longitudinally disposed, the lower pair of which are keyed together by means of the keys *d*, which prevent any longitudinal sliding movement of such planks one on the other. The inner side of these side boards is provided with a housing *e*, in which a rock-shaft *f*, with its chain mechanism, may be protected from the wearing action of the freight carried within the car. The side boards are further provided with a plurality of side stakes *g*, secured to the inner side thereof and to the supporting-framework of the car, all of which materially helps to strengthen and stiffen the side boards.

To further and efficiently strengthen and stiffen the side boards, and particularly the lower part or portion thereof, so as to form what might be termed "side-plank" girders, we provide a plurality of U-shaped strap portions formed, preferably, of metal links *h*, bent into such a manner as to be passed over the upper portion of the housing and the lower pair of planks with its ends extending out beyond the same, and flat metal bar portions *i*, extending downwardly from each end of the links and provided with threaded portions at their lower ends, which threaded portions are passed through a pressed-metal washer *j*, arranged underneath the lower outer edges of the needle-beams, so as to form a washer or washers therefor. By tightening the nuts *k* on the lower ends of such straps the strap mechanisms are brought into rigid engagement with the side boards or a part thereof and effectively tie the lower pair of planks to the needle-beams, forming in connection therewith efficient strengthening side girders, all of which effectively strengthens the car, and thereby enables it to withstand the heavy stress and strains incident to the usage thereof.

We claim—

1. In a car of the class described, the combination of a supporting-frame portion provided with a plurality of beams transversely arranged, side girders comprising a plurality of planks arranged longitudinally of the car over the ends of such transverse beams and extending upwardly therefrom, and metallic strap mechanism secured to such transverse beams and passed up and over the girders formed by such planks so as to stiffen the structure, substantially as described.

2. In a car of the class described, the combination of a supporting-framework provided with a plurality of beams transversely arranged, side boards for the car extending upwardly from the supporting-frame and comprising side girder portions formed by a plurality of wooden planks longitudinally disposed, key mechanism for preventing longitudinal movement of the lower set of planks that form the side girder portions, and me-

tallic strap mechanism secured to such transverse beams and passed upwardly and over the lower set of planks that form the side girder portions to stiffen the structure, substantially as described.

3. In a car of the class described, the combination of a supporting-framework provided with a plurality of needle-beams transversely arranged, side boards for the car extending upwardly from the supporting-frame and formed of a plurality of wooden planks longitudinally disposed, and comprising a lower set of planks forming side girder portions of such side boards, side stakes for securing such boards to the supporting-frame, key mechanism engaging the lower set of planks to prevent longitudinal movement thereof, and metallic straps secured to the needle-beams and passed upwardly and over the lower set of planks that form the lower girder portions of the side boards to stiffen the structure, substantially as described.

4. In a car of the class described, the combination of a supporting-framework provided with a plurality of needle-beams transversely disposed, side boards for the car extending upwardly from the supporting-framework and formed of a plurality of wooden planks longitudinally disposed, side stakes for the car secured to the side boards and to the supporting-framework, a housing arranged inside of the side boards, key mechanism engaging the lower pair of planks that form the side boards to prevent longitudinal movement of the same, a metal link arranged over the housing and the lower pair of planks, and strap mechanism engaging each end of such link and the metal beam to stiffen the structure, substantially as described.

5. In a car of the class described, the combination of a supporting-framework provided with a plurality of needle-beams transversely disposed, side boards for the car formed of a plurality of wooden planks longitudinally disposed, a housing arranged inside of such side boards, key mechanism engaging the lower pair of wooden planks which form a part of the side board to prevent longitudinal movement thereof, side stakes secured to the side boards of the car and the supporting-framework, metal washers arranged under the lower outer edges of the needle-beams, a metal link arranged over the housing and the lower pair of planks of the side boards, metal straps secured to such links and to the metal washers on the lower outer edges of the needle-beam to stiffen the structure, substantially as described.

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